

IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R.

§1.121:

1-29. (canceled).

30. (currently amended) A field emission device, comprising
a substrate having a top side and an opposite bottom side;
an epitaxial buffer layer affixed to the top side of the substrate;
a dielectric layer disposed on the top side;
a conductive layer disposed on top of the dielectric layer opposite the substrate,
the conductive layer and the dielectric layer defining a cavity extending downwardly to
the substrate; and
at least one nanorod affixed to the substrate via the epitaxial buffer layer and
substantially disposed within the cavity.

31. (canceled).

32. (original) The field emission device of Claim 30, employed in an
imaging system.

33. (original) The field emission device of Claim 30, employed in a
lighting system.

34. (currently amended) The field emission device of Claim 30, wherein the
nanorod is an X-nanorod, wherein X comprises is a material selected from a group
comprising: a carbide, an oxide, a nitride, an oxynitride, an oxycarbide or a silicide,
[[and]]or combinations thereof.

35. (original) The field emission device of Claim 30, wherein the substrate comprises an inorganic monocrystalline substance.

36. (currently amended) The field emission device of Claim 35, wherein the inorganic monocrystalline substance comprises ~~a material selected from a group comprising:~~ silicon, an aluminum oxide, and silicon carbide, and combinations thereof.

37. (currently amended) The field emission device of Claim 30, wherein the dielectric layer comprises ~~a material selected from a group comprising:~~ silicon dioxide, silicon nitride, silicon oxynitride, and aluminum oxide, and combinations thereof.

38. (currently amended) A nanostructure, comprising:
an inorganic substrate having a top side and a bottom side;
[[a]]an epitaxial conductive buffer layer disposed adjacent to the top side; and
a plurality of elongated carburized metal nanostructures extending from the epitaxial conductive buffer layer.

39. (currently amended) The nanostructure of Claim 38, wherein the inorganic substrate comprises [[is]] a crystalline substance, ~~selected from a group consisting made of[:]~~ silicon, aluminum oxide, and silicon carbide, [[and]]or combinations thereof.

40. (original) The nanostructure of Claim 38, wherein the plurality of elongated carburized metal nanostructures comprises at least one nanorod.

41. (original) The nanostructure of Claim 38, wherein the plurality of elongated carburized metal nanostructures comprises at least one nanoribbon.

42. (original) The nanostructure of Claim 38, wherein the plurality of elongated carburized metal nanostructures each has a smaller dimension of less than 800 nm.

43. (currently amended) The nanostructure of Claim 38, wherein the carburized metal is carburized from an oxide of a metal ~~selected from a group comprising~~ comprising~~[[[:]]~~ molybdenum, niobium, hafnium, silicon, tungsten, titanium, or zirconium, ~~[[and]]~~or combinations thereof.

44. (original) A field emission device, comprising
a substrate having a top side and an opposite bottom side;
a dielectric layer disposed on the top side;
a conductive layer disposed on top of the dielectric layer opposite the substrate,
the conductive layer and the dielectric layer defining a cavity extending downwardly to
the substrate;
a conductive platform, having a top surface, disposed on the top side of the
substrate within the cavity; and
at least one nanorod affixed to the top surface of the conductive platform and
substantially disposed within the cavity.

45. (original) The field emission device of Claim 44, wherein the
conductive platform comprises a conic-shaped member having a relatively large bottom
surface opposite the top surface, the bottom surface affixed to the substrate.

46. (currently amended) The field emission device of Claim 44, wherein the
conductive platform comprises ~~a material selected from a group comprising:~~ silicon,
molybdenum, platinum, palladium, tantalum, or niobium, ~~[[[and]]~~or combinations
thereof.

47. (original) The field emission device of Claim 44, wherein the nanorod is a carbide nanorod.

48. (original) The field emission device of Claim 44, wherein the substrate comprises an inorganic monocrystalline substance.

49. (currently amended) The field emission device of Claim 48, wherein the inorganic monocrystalline substance comprises is selected from a group comprising: silicon, aluminum oxide and silicon carbide, [[and]] or combinations thereof.

50. (original) The field emission device of Claim 44, wherein the substrate comprises a polycrystalline material.

51. (original) The field emission device of Claim 44, wherein the substrate comprises amorphous glass.

52. (original) The field emission device of Claim 44, wherein the dielectric layer comprises silicon dioxide.

53. (canceled).

54. (new) A field emission device, comprising
a substrate having a top side and an opposite bottom side;
a polycrystalline diffusion barrier affixed to the top side of the substrate;
a dielectric layer disposed on the top side;
a conductive layer disposed on top of the dielectric layer opposite the substrate,
the conductive layer and the dielectric layer defining a cavity extending downwardly to
the substrate; and

at least one nanorod affixed to the substrate via the polycrystalline diffusion barrier and substantially disposed within the cavity.

55. (new) A nanostructure, comprising:
an inorganic substrate having a top side and a bottom side;
a polycrystalline diffusion barrier disposed adjacent to the top side; and
a plurality of elongated carburized metal nanostructures extending from the polycrystalline diffusion barrier.